

ART. X.—*Termites from the Ellice Group.*

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The only reference in literature to termites in the Ellice Group appears to be that of Rainbow (1897), in whose account of the insect fauna of Funafuti *Calotermes marginipennis* Latreille is recorded as destroying coconut palms.

I am indebted to Dr. P. A. Buxton for kindly forwarding to me a small collection of termites from this group of islands, comprising soldiers and workers of *Prorhinotermes inopinatus* Silvestri and several series of a rather large species of *Calotermes*, all of which were collected by him between 18th and 24th September in the trunks of living or dead coconut palms. Dr. Buxton states in his notes that the latter is the species referred to by Rainbow; it is, however, quite distinct from *C. marginipennis* Latr., of which I have a good series (from South-Eastern United States) determined by Dr. T. E. Snyder, and it is also distinct from *C. samoanus* Holmgren, from Apia, Samoan Islands, the only described species with which it appears to be very closely allied.

In view of Rainbow's reference to the papers of McLachlan (1883) and Blackburn (1884) on the Hawaiian termites, in which the two American species *C. marginipennis* Latr. and *C. castaneus* Burm. are recorded from Hawaii, and of his discussion upon the possible means by which the former species became introduced first into the Hawaiian Islands and later into the Ellice Group, it may be noted on the authority of Snyder (1922 and 1924) that both species have been misidentified. It is not known upon what evidence Rainbow associated the Funafuti insects with those from Hawaii, but the species described by me in this paper and for which I propose the specific name *rainbowi* is not conspecific with any described Hawaiian form.

In response to an enquiry the Director of the Australian Museum states that the material examined by Rainbow cannot now be found in that Institution.

CALOTERMES (NEOTERMES) RAINBOWI, n. sp.

(Text-Figure 1.)

Imago.

Colour.—Head, thorax and dorsum of abdomen russet; margin of pronotum and apical tergites of abdomen darker; under surface and legs honey yellow, shading to Dresden brown towards the apex of abdomen and tibiae; wings Dresden brown, principal veins darker.

Head (Text-fig. 1a).—Less than twice as long as wide, frons slightly concave, with scanty moderately long setae. Eyes large, nearly circular (0.513×0.570), prominent. Ocelli large, rounded, close to eyes. Postclypeus very short, with four long reddish setae. Labrum a little wider (at base) than long, narrowed anteriorly to the truncate apex. Antennae 18-jointed (rarely 19-jointed); 1st joint short and wide, narrowed in the middle; 2nd half as long as 1st, 3rd about as long as 2nd, but narrower at base and wider at apex, or as shown in Text-fig. 1a; 4th about as wide as 3rd, but shorter; 5th-15th increasing in length progressively; 16th and 17th equal in length to 15th; 18th markedly shorter and narrower than 17th, narrowest of all. Mandibles as in Text-fig. 1b.

Thorax (Text-fig. 1c).—Reniform, moderately arched transversely, the margin impressed, anterior margin strongly concave, the sides rounded, posterior margin convex, slightly sinuate in the middle, the entire surface with scanty setae similar to those on head. Meso- and metanotum with posterior margin nearly straight.

Wings.—With the anterior margin ciliate, few setae on principal veins, none on smaller veins, the four principal veins and their branches very distinct throughout their length, the media connected with the radial sector by many stout veinlets, cubitus distinct to the sixth or eighth branch, from thence onward its course, and the course of the remaining branches (7 to 9 in number) is indicated by irregular lines of scale-like micrasters similar to those on membrane.

Legs.—Short and stout, with scanty setae, femora not markedly thickened, tibial spurs long and slender.

Abdomen.—With the apical half of the segments clothed scantily with long setae.

Measurements.—

	mm.
Length, with wings - - - - -	16.25 — 16.75
Length, without wings - - - - -	9.25 — 10.50
Head, to apex of labrum, long - - -	2.16
Head, to clypeofrontal suture, long - -	1.60 — 1.70
Head, at and including eyes, wide - -	1.82 — 1.92
Pronotum, long 1.25 — 1.30; wide - -	2.16 — 2.22
Wings, forewings, long 12.50; wide - -	4.00
Wings, hindwings, long 12.00; wide - -	3.60
Tibia iii, long - - - - -	1.60 — 1.65

Soldier.

Colour.—Head orange-rufous, shading to ochraceous-orange on frons and ventral surface; anteclypeus hyaline shaded with ochraceous-orange; pronotum yellow-ochre narrowly margined with darker colour; the whole insect glabrous and with scanty, moderately long setae.

Head.—Widest in middle, slightly rounded on sides, frons flat and not rugose. Labrum (Text-fig. 1d) about as long as wide,

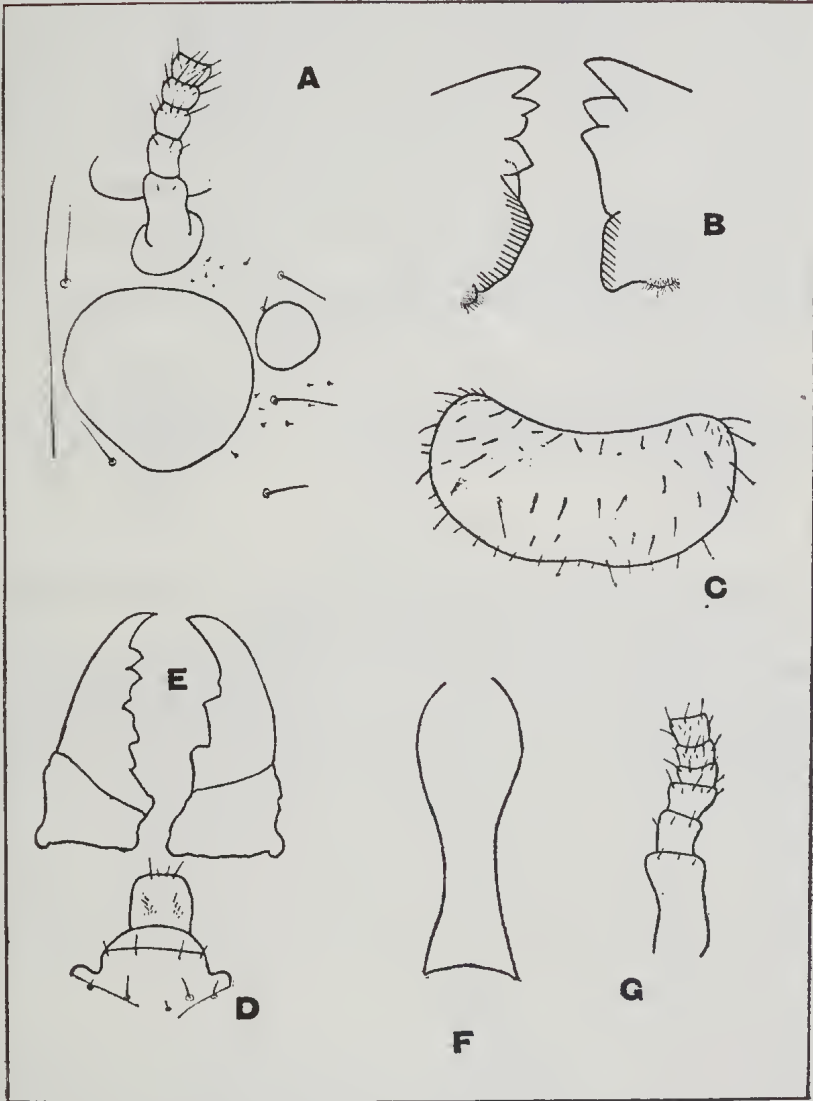


FIG. 1.—*Calotermes (Neotermes) rainbowi*, n. sp. A, imago, side of head showing eye, ocellus and basal joints of antenna; B, imago, mandibles; C, imago, pronotum; D, soldier, clypeus and labrum; E, soldier, mandibles; F, soldier, gula; G, soldier, basal joints of antenna.

nearly straight on sides, truncate in front. Postclypeus with four moderately large setae near anterior margin. Mandibles (Text-fig. 1e) stout; the right with two stout teeth about the middle; the left with two smaller, angular teeth, and one very small one on the apical half, followed by one large blunt tooth and a much smaller one posteriorly. (Gula as in Text-fig. 1f.) Antennae (Text-fig. 1g) 15- to 17-jointed; 3rd joint about as long as 2nd, but narrower at base, or longer than 2nd and 4th, and subclavate in form.

Thorax.—Pronotum large, wider than head, similar in shape to that of imago.

Legs.—Moderately stout, femora not markedly thickened, claws and tibial spines long and slender.

Abdomen.—With scanty, moderately large setae, as on legs.

Measurements.—

	mm.
Total length - - - - -	12·00 — 13·00
Head, with mandibles, long - - - - -	4·85 — 5·13
Head, without mandibles, long - - - - -	3·15 — 3·53
Head, wide - - - - -	2·50 — 2·67
Gula, wide - - - - -	0·39 — 0·45
Pronotum, long, 1·48 — 1·59; wide - - - - -	2·67 — 2·85
Tibia iii, long - - - - -	1·70 — 1·99

Locality.—Ellice Group: Nanumea (Type locality), Funafuti, Nanomaga, Nui and (?) Nukulailai Islands.

The specimens (soldiers and workers only) from the last-mentioned locality appear to be conspecific with the others, from which they differ in the soldier caste in their smaller size (Length 10·00; head with mandibles 3·90, without mandibles 2·56; length of pronotum 0·96, width of pronotum 1·93; gula 0·28; tibia iii 1·14), paler coloured head and shorter and finer setae on head and thorax. The descriptions and measurements are of specimens from a complete nest-series from Nanumea, which agree in all details with similar series from the other islands mentioned. Second- and first-form nymphs, as well as recently moulted imagos, are present in two of the colonies. The oldest individuals of the latter caste do not appear to have attained the maximum degree of chitinisation, as evidenced by the distension of the abdomens with fat-body.

Allied species.—The imago is very similar to *C. samoanus* Holmgr., but it is lighter in colour and has much shorter and scantier setae on pronotum and abdomen. In the soldier caste the proposed new species differs from the Samoan insect in having a much lighter coloured and narrower head, wider gula and relatively longer pronotum. From *C. schultzei* Holmgr. it is distinguished by smaller head, ocelli and eyes, eyes closer to lower margin of head, head and body slightly less setaceous, shorter wings, darker wing-veins and paler wing-membrane. In the soldier caste the gula is wider and the pronotum much larger. The antennae of the New Guinea species are 17- to 19-jointed

in the imago and 15- to 17-jointed in the soldier. From the New Britain species which I have provisionally identified and described in the alate form as *C. papua* Desneux (manuscript, June, 1925), it is distinguished by its larger and more arched pronotum, larger and more numerous setae on head and thorax, and paler colour (the latter condition possibly due to immaturity). The eyes and wings are alike in the two species. In the soldier caste it is distinguished by its flattened frons (slightly concave and rugose in the New Britain species), much larger pronotum, more setaceous head, thorax and abdomen and slightly wider gula. The antennae in *C. papua* are 17- or 18-jointed in the imago and 14- to 17-jointed in the soldier. These two species are certainly very closely related to each other, and to a species (soldiers) collected at Gordonvale, N. Queensland, by Mr. F. H. Taylor, which appears to be indistinguishable from *C. irregularis* Frogg., from the coastal districts of North-eastern and North Australia.

Dr. Buxton states that this termite is a serious pest in the Ellice Group, where it tunnels in the trunks of living coconut palms and ultimately destroys them.

REFERENCES.

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